ANSWER KEY

SCHOOL : AI TONG PRIMARY SCHOOL

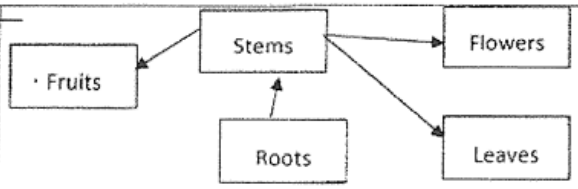
LEVEL : PRIMARY 6

SUBJECT : SCIENCE

TERM : 2021 PRELIM

Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**
3	3	4	2	4	4	1	2	3	3
Q11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
2	3	4	2	1	2	3	4	3	4
Q21	**Q22**	**Q23**	**Q24**	**Q25**	**Q26**	**Q27**	**Q28**		
3	1	3	2	4	2	3	4		

Qn.	Suggested answer	Things to note
29 (a)	Choice: Cells B and C. Data: They have no chloroplasts. Explain: to trap light and carry out photosynthesis. Apply: hence no oxygen is produced.	The question asks for cells that are **unable** to produce oxygen. You need to identify both cells **B and C.** For the explanation to be awarded any marks.
(b)	P is a nucleus. Without P **all** of the cell activities cannot be controlled.	Revise function of nucleus.
30 (a)	Dispersed by **animals**.	
(b)	The small size of the seed allows the seed to be easily eaten by animals. As the seed is hard, it **cannot** be digested by the animal, and get passed out in their dropping.	Answer need to account for both 'small' and 'hard'.
(c)	It prevents overcrowding. OR Reduce competition for **water**, **space**, **sunlight** and **minerals**, ensuring that the plants can grow well.	As the question asks to state only one advantage, stating any one of the resources earns the full mark. Do not confuse the resources that plants compete for in an overcrowded environment with conditions required for germination (WOW – Water Oxygen and Warmth).

31(a)		Remember to draw arrow heads.
(b)	To find out if the number of leaves affects the **mass** of the fruits on the plant.	Refer to the data table and identify the measured variable.
(c)	Plant X had **more leaves** to make **more food** that was **transported** to the fruits, resulting in a **greater increase** in the total mass of the fruits.	Need to compare.
32(a)	As the distance of light from plant P decreases, the height of gas collected in the test-tube **increases**.	Use the sentence structure, As the (cause) *increases/decreases*, the (effect) *increases/ decreases.*
(b)	As the distance decreases, intensity of light **increases**, resulting in the increase in rate of photosynthesis.	
(c)	Choice: B Data: For B, height of gas collected was the **highest** Explain: This shows that when using filter B, rate of photosynthesis is **highest** and the plants produce the most about of oxygen. Prawns use the oxygen to respire and provide carbon dioxide for the plant to make food. The cycle repeats itself continuously.	Need to compare.

33 (a)	She breaths **faster**.	—
(b)	Carbon dioxide from the muscle cells is transferred to the bloodstream which carries it to the heart. Heart pumps the blood containing the carbon dioxide to the lungs. From the lungs, the carbon dioxide goes to the windpipe and releases from the nose.	Describe the whole pathway.
34 (a)	Point 1: The **water** in the wet sponge gains heat. Point 2: from the **warm air** as the air moves through it. Point 3 As water in the sponge evaporates, it absorbs some of the heat from the warm air. This cooled air is blown out through the vent.	Concept tested is evaporative cooling. Heat transfer from where to where, need to be described clearly.
(b)	He could add ice to the water tank.	Suggested method need to be practical.
35(a)	Metal cover lost heat to the ice and decreases in temperature. The water vapour will to lose heat **faster** to the cooler metal cover and **condense** faster to form more water droplets.	Need to compare.
(b)	Oil above the water in set-up B prevents water from evaporating. There was less water vapour in the container to condense on the metal cover, forming less water droplets were formed.	Oil **prevents** water from evaporating.
(c)	She squeezed the bottle to allow air in the bottle to **escape**. When she released the bottle, the oil could enter the bottle to take up the **space** previously occupied by the air.	

36(a)	Flexibility	
(b)	Choice: Material X Data: Material X did not bend . Explain: Food tray should not bend in order to carry food.	Bend the least ≠ did not bend.
(c)	For material X, distance *d* remains the **same**. For materials Y and Z distance *d* **decrease** **lesser**.	Need to describe what happens to material X, Y and Z.
37 (a)	Water acts as a lubricant to reduce friction between surfaces and reduces the frictional force between the road and the tire. Therefore, the car travels further before stopping.	
(b)	The tread in the old tire has worn out due to the friction between the tire and the road as it travels.	
(c)	Any two variables : • the mass/ weight/ type of toy car/ use the same car • use the same ramp/ type of surface/ type of ramp/ length of ramp/ • location of experiment • thickness of (each) **book** / same books used • wheels of the toy car/ type of wheels/ number of wheels • starting point on the ramp	
(d)	Repeat the experiment a few more times and ensure the results are consistent.	

38 (a)	The metal contacts gain heat and ___expand___. The metal contacts come into contact to form a ___closed___ circuit, turning on the water sprinkler.	Use correct terms in you explanation. Closed circuit, not *complete* circuit.
(b)	Water sprinkler would stop sprinkling water. The metal contacts lose heat and ___contract___. A gap forms between the metal contacts. This makes the circuit an ___open___ circuit.	
(c)	Any one of the following: • Increase the length of the metal contacts. • Decrease the gap between the metal contacts. • Change the metal contacts to one that expands more with less heat gain.	
39 (a)	L is a ___magnet___.	
(b)	When switch was closed, metal bar became an electromagnet. L repelled the electromagnet as like poles of the magnet are facing each other. The force of repulsion pushed L ___upwards___ against the ___gravitational___ force.	
(c)	Any value between 7.6cm to 10 cm.	
(d)	A stiffer spring requires a ___larger___ force to compress to the same length. Since the magnetic force is the same, the spring compresses less.	~~A stiffer spring is less elastic.~~ compresses less/extends less

40(a)	This is to ensure a fair test. For a fair test, there can only **one** changed variable, which is the type of liquid. This is to ensure that the difference in results are solely due to the type of the liquid and not the volume of the liquid.	—
(b)	All the liquids gained heat and expanded.	
(c)	On a hot day, the drinks gain heat from the surrounding air and **expand**. The space allows the drink to **expand**, without causing the bottle to crack.	
41(a)	Gravitational Potential Energy → Kinetic Energy → Gravitational Potential Energy	
(b)	The gravitational potential energy at A was converted to kinetic energy, heat energy / sound energy /other forms of energy. Therefore the amount of kinetic energy at B is not enough to move the flap to position D.	
(c)	Point 1: The cat exerted a stronger push force (than the mice) Point 2: to overcome magnetic force of attraction.	